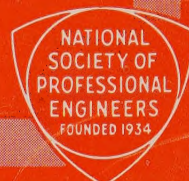




the **ILLINOIS ENGINEER**



Ah, friends, dear friends, as the years go on and heads
get gray, how fast the guests do go!

Touch hands, touch hands, with those who stay.

Strong hands to weak, old hands to young, around the
Christmas board, touch hands.

The false forget, the foe forgive, for every guest will go
and every fire burn low and every cabin empty stand.

Forget, forgive, for who may say that Christmas day may
ever come to host or guest again.

Touch hands!

John Norton's Vagabond
by William H. H. Murray

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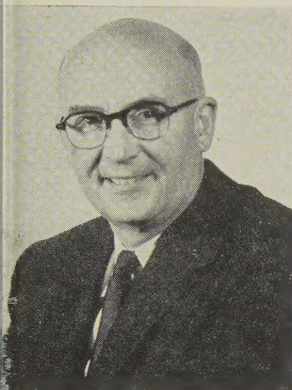
ILLINOIS ENGINEER: P. E. ROBERTS, *Editor*; C. DALE GREFFE and W. J. ROBERTS, *Associate Editors*.

Of Interest to I. S. P. E.

What Characterizes Professional Engineers?

by ROYCE E. JOHNSON, President

Years ago, after my freshman year in college, I had a summer job in a factory as a machine tool operator. It was my first experience in a large plant and several weeks



President Johnson

passed before I could compete successfully at the tool crib window or in the quitting time rush for the time clock. In fact, the country boy felt very definitely that the general attitude seemed to be "do the other fellow before he can do you." Even after acquiring that ability, such actions were not enjoyable.

Three years later I was privileged to work in the engineering office of the telephone company in the same city. The difference in personnel relations and general attitude was so great one could hardly believe it was the same city.

Why was there such a great difference?

Possibly what three more years of engineering college had done for the uncouth freshman was a factor; he may have developed traces of professional attitude and demeanor that invited a degree of respect and cooperation. Applied psychologists recognize that one's respect for himself and others is important in determining the reactions of a man's associates, but it is very unlikely that this was a major factor in establishing excellent personnel relations.

The friendly, helpful atmosphere in that office emanated from an abundance of a characteristic that distinguishes true professional individuals and societies—a concern for the welfare of others and a desire to serve their fellowmen. Requests and orders in that office were not reacted to as arbitrary edicts and no one threw his weight around.

A similar friendly, cooperative service spirit is generally present in successful, productive engineering and scientific offices and laboratories and professional societies. If this spirit is lacking in a department of professionals, disintegration, demoralization, jealousy and unproductivity will soon be evident.

How identical is the situation in any organization! A family, a church congregation, a city or a society of professional men can become similarly afflicted if the leaders do not recognize symptoms of trouble and cure the cause by appropriate techniques.

Committee and office positions in ISPE Chapters and at the State level provide opportunities for experiences which develop one's ability to influence people and get things done. In this service, partly because of association with other high caliber professional engineers and partly as a result of analyzing situations and solving problems, the engineer's professional characteristics continue to develop. More concisely, demonstrating one's professional attitude by serving his society of professional engineers further develops his own professional stature. For proof observe the sizeable number of engineers who have been active workers for years in ISPE and NSPE.

It is readily evident, especially during the Christmas season, that the characteristic of professional men described above is an expression of Christianity. On a non-professional level, the idea this message attempts to convey is exemplified by the story of a boy who was admiring a large shiny new car parked at the curb as the owner came to drive away. Noticing the boy's interest, the owner asked the boy if he liked it. "Gee, it's a beauty," replied the boy, "how much did it cost?"

"Well, I don't really know," the man replied.

"That's funny, you don't look like a thief. Why don't you know?" the boy persisted.

"It was given to me by my brother and he did not tell me its cost."

To this the boy replied, "I would like to be a brother like that."

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Vox Secretarii

by P. E. ROBERTS, Executive Secretary

Bills and Ballots

The first week in December, the 1957 official ballot and dues statements were mailed. A departure from the routine of the last five years has been made. Instead of the annual committee preference slip, which has been used in the past, a questionnaire requesting information on functional sections interest is enclosed. It was the feeling of the Executive Committee that the interest in committee activity could be found through the response to this questionnaire.

The second questionnaire is one asking for information which will be used in the new membership roster to be published early in 1957.

Both of the requests for information are postage paid. However, if you desire to save postage, you may include either or both with your check for annual dues.

Dues Payments

One of the reasons why the Illinois Society has been able to "hold the line" on the amount of annual dues is because of the excellent return on dues statements and checks. The immediate mailing of the annual check saves time and money in the preparation and mailing of second and third notices. Your continued cooperation is solicited and will be appreciated by your state officers and your Executive Secretary.

Membership

With the record number of twenty-eight new and three reinstatements on the November 21 ballot, membership totals are increased to 1,923, a new high for the Illinois Society. Unlike previous years, the deductions for non-payment of dues were made on July 1 instead of December 31; therefore, instead of a sharp drop after the first of the year, membership totals will continue to climb.

In the NSPE membership totals, Illinois is grouped with Texas, Pennsylvania, Ohio, New York and California, or those state societies who have over 5,000 prospective members. In this group Illinois stands No. 5 out of 6 and the report shows that Illinois had a net gain of 91 National members, or a net gain of 6.4 members per thousand. In the same period, the Texas Society showed a net gain of 72.2 members per thousand. Illinois has 14,298 prospective members who are registered engineers in Illinois, which is the second largest total of prospective members in all of the state societies of NSPE. NSPE President Rhinehart is bending every effort to show a membership gain. Since there will be considerable publicity gained from National Engineers Week, it would seem fitting and proper to couple membership activity with National Engineers Week. Chapter officers and in particular Membership Chairmen are urged to take full advantage of publicity during the next two months.

Christmas Greetings

Number 1 assistant Mrs. Donna Freeman joins me, your Executive Secretary, in wishing each person belonging to the Illinois Society a very Merry Christmas and a happy, prosperous 1957.

Items of Personal Interest

Past President Klassen has returned to his desk in Springfield after completing a South Pacific inspection tour for the World Health Organization while on leave of absence. He showed slides of his trip to Capital chapter on November 27, and if they are comparable to the ones he took two years ago, the new slides will be both interesting and instructive.

Professor Chester P. Siess (N '53), member of the Champaign County Chapter and of the Department of Civil Engineering, University of Illinois, was one of the three recipients of the 1956 Research Prize of the American Society of Civil Engineers. Professor Siess was named "in recognition of outstanding contributions to knowledge through research on reinforced concrete slabs."

Elmer Knight (N '47), Assistant Chief Highway Engineer and member of Capital Chapter, is convalescing from a coronary attack suffered in October. Best wishes for a speedy and comfortable recovery to Elmer from his many friends in the Illinois Society.

Ernest G. Hurst, Jr., son of member Ernest Hurst (N '49) of Hillsboro, was selected as one of 556 outstanding high school seniors to be awarded a scholarship out of 60,000 who competed for merit scholarships given by the National Merit Scholarship Corporation. He is studying engineering now at M. I. T.

The Executive Secretary's office has just received word that Thomas P. Weber, who was elected to Honorary Junior membership in 1949, has died. The Society extends its sympathy to his widow and family.

Highway and Traffic Conference Dates

The annual meetings of the Illinois Highway Engineering Conference and the Illinois Traffic Engineering Conference are as follows:

43rd Annual Illinois Highway Engineering Conference
February 26, 27, 28, 1957

Assistant Director: John W. Hutchinson
303 Civil Engineering Hall
Urbana, Illinois

9th Annual Illinois Traffic Engineering Conference
February 28 and March 1, 1957

Director: John E. Baerwald
401 Civil Engineering Hall
Urbana, Illinois

PROFESSIONALISM

by ROBERT A. SPRECHER *

One subject is of equal importance to both engineers and lawyers—professionalism. No profession has been more maligned and defamed, has had poorer public relations, and has been unsympathetically portrayed more often in novels, plays, motion pictures and even comic strips than the legal profession. By contrast the medical profession is uniformly treated with dignity and respect, and the writer has not been aware of anyone in particular taking pot shots at engineers.

A few years ago a public opinion poll asked this question: "Suppose a young man came to you and asked your advice about taking up a profession. Assuming that he was qualified to enter any profession, which one would you first recommend to him?" The answers were:

Doctor	30.0%	Banker	4.1
Engineer	16.5	Dentist	3.8
Business Executive	8.0	Veterinarian	2.6
Clergyman	8.0	Don't know	8.2
Lawyer	7.5		—
Public Administrator	6.3%		100.0
Teacher	5.0		

Despite the poor public relations of the legal profession, the writer has been amazed in the last ten years as a bar examiner at the sacrifices and privations, the cost, time and superhuman effort that people put forth to become lawyers and the even greater struggle which they make to keep a license that is threatened to be taken away. There is only one answer to this paradox—there is something rewarding, satisfying and stimulating about a true profession. If a person is fortunate enough to be in a profession, it is his duty and for his best self-interest to expand and develop professionalism on every possible front.

What is a true profession as opposed to some of the professed "professions"? Historically, there were three "learned professions"—theology, medicine, and law. The fourth well-defined profession is engineering. Each of these requires more study, training and experience, more judgment and discretion, more independence, individualism and creativeness than any other vocation, craft or calling. After the first four professions there appeared chronologically dentistry, pharmacy, education and veterinary medicine. More recently in historical time there have been added to the professional group, primarily by virtue of the fact that separate colleges and schools have been established in universities, the professions of journalism, architecture, social work, nursing, and library science. Somewhere on the fringe areas of true professionalism and knocking at the door for admittance are business administration, public ad-

ministration, and the physical sciences such as chemistry, physics, biology, and geology.

One of the marks of a profession is a professional license. Most of the established professions require some kind of license. However, the license requirement does not in itself create a profession. For example, in Illinois, real estate brokers, embalmers, optometrists, barbers, beauty culturists and horseshoers need licenses to operate. Obviously none of these groups can be called a profession merely because of the license requirement.

The definition of a professional employee in the Taft-Hartley Act, the substantial provisions of which were derived from the regulations under the Fair Labor Standards Act, points up some of the professional characteristics:

"Professional employee" means any employee engaged in work

(1) predominantly intellectual and varied in character as opposed to routine mental, manual, mechanical, or physical work;

(2) involving the consistent exercise of discretion and judgment in its performance;

(3) of such a character that the output produced or the result accomplished cannot be standardized in relation to a given period of time;

(4) requiring knowledge of an advanced type in a field of science or learning customarily acquired by a prolonged course of specialized intellectual instruction and study in an institution of higher learning or a hospital, as distinguished from a general academic education or from an apprenticeship or from training in the performance of routine mental, manual or physical processes."

The professional man is also a creative artist who has developed his own particular sense of style. He is a man who puts the stamp of his own identity upon his work. He is the man with ideas who develops the novel and best way to apply the same knowledge which others have been applying with dull uniformity before him.

Let me try to phrase the hallmarks of a profession in a different way. Many of the things which I shall mention can possibly be interpreted as intended to limit the number of persons in a profession. During the era of Jacksonian democracy in the early 1800's in this country, it was believed that every man had a God-given right to practice any calling or profession. Now we interpret our democratic ideal not as an equal right but as an equal opportunity to any equally qualified person who can prove that he has the competence and integrity to enter a profession. We set certain standards for the professional man which incidentally limit the number of members in a profession, but the standards are not set for that purpose nor to create a monopoly for those already

* Robert A. Sprecher, a member of the Chicago legal firm of Crawley, Sprecher and Weeks, spoke before the Chicago Chapter of the Illinois Society of Professional Engineers on October 18.
Mr. Sprecher is on the National, Illinois, and Chicago Bar Examiners Committees and also a member of all three Grievances Committees of the Bar Associations. He is a member of the faculty of Northwestern University Commerce School.

in the profession, but to protect the public from charlatans, quacks and pretenders. If, as a by-product of such standards, a profession becomes solidified and better organized, the public also benefits from that fact.

The four great hallmarks of a profession are:

1. A profession requires certain high standards of competence.
2. A profession requires certain high standards of integrity.
3. A professional man is independent.
4. A professional man stands ready at all times to render public service.

Standards of competence, requiring greater knowledge and experience from the professional man, are designed, as said, to protect the public. The most important of the standards of competence are educational requirements. A vocation begins to develop into a profession when separate schools and colleges are created to teach its subject matter. The first medical school was established at Columbia University (then King's College) in 1780; the first law school was established at Harvard in 1817; the first school of dental surgery at Baltimore College in 1879; the first college of veterinary medicine at Iowa in 1880. The fact that engineering ranks as the fourth learned profession is borne out by the history of engineering schools. Engineering was first taught as a separate course at the United States Military Academy in 1802; Rensselaer Polytechnic Institute was established in 1824; and Massachusetts Institute of Technology was established in 1865.

Once the schools become available for professional education, the next step must be to require persons to take advantage of educational opportunities in order to enter the profession. Most of you are aware that it requires seven years of college and graduate work to become a doctor, six years to become a lawyer, and five years to become a pharmacist. In Illinois at the present time it requires eight years of study, training and experience to become a professional engineer and four years of the eight may be satisfied by undergraduate work and two years may be satisfied by graduate work. To become a structural engineer in Illinois requires six years of study and training, and four years of credit in an engineering school is equivalent to two of those six years. Since the engineering profession has a long and honorable history in regard to the establishment of engineering schools and since more recently it has established the license requirement, one of the next logical steps would be to *require* certain minimum educational requirements instead of permitting the required training and experience to be acquired either in school or in practice.

Once a profession has established its own schools and colleges and some authority, usually governmental, has established minimum educational requirements, it is then imperative that some supervision be exercised by the profession over the schools to determine that the schools maintain the standards which have then been

set by the profession. In the case of most of the professions requiring licenses in Illinois, it is necessary that professional schools be "reputable and in good standing" and the Department of Registration and Education, usually upon the recommendation of the committee of practicing professional men who give the professional examination, approves or disapproves the various schools holding themselves out as providing a professional education. If a school is approved its graduates are eligible to take the professional examination and if it is disapproved its graduates are not eligible to take the examination. Acting as a watchdog of professional schools is a difficult task, particularly where there are many such schools. In the medical profession the Medical Practice Committee follows the recommendations of the American Medical Association and in the legal profession the Board of Bar Examiners follows the recommendations of the American Bar Association. In both cases the professional association devotes large sums of money and considerable time and effort in policing professional schools and their standards. Recently the Illinois Supreme Court held, however, that where the medical examining committee arbitrarily disapproved a school because the American Medical Association disapproved of the medical theory taught at the school, the court would overrule the committee and approve the school nevertheless. In that case the court held that a school of osteopathy, which otherwise fulfilled the standards set for medical schools, be approved and therefore its graduates be eligible to take the examination leading to a full medical license rather than the limited license to which they were previously entitled, permitting them to practice medicine but without the use of drugs or surgery.

In addition to professional schools and colleges, standards of competence are maintained by the examination required prior to the issuance of a professional license. In all of the professions examining committees are created consisting of professional men who prepare, conduct and grade the professional examination. In all of the professions under the control of the Department of Registration and Education, the members of the committee are appointed by the Director of Registration and Education. In medicine the committee consists of five reputable physicians, in dentistry it consists of five licensed dentists, each with five years experience, in pharmacy it consists of five registered pharmacists, each with ten years experience. In law the Board of Law Examiners consists of five practicing attorneys appointed by the Illinois Supreme Court. In professional engineering the committee consists of nine professional engineers, each with twelve years experience, and in structural engineering it consists of five structural engineers, each with ten years experience, one being a professor of civil engineering at the University of Illinois. In public accounting the committee consists of three certified public accountants, each with five years experience. They were formerly appointed by the University of Illinois but now they are appointed, as are the professional en-

gineering and structural engineering committees, by the Director of Registration and Education.

The professional examination is usually conducted twice a year and is open to all applicants who have satisfied the minimum educational or experience requirements. About 95 per cent of the applicants pass the medical examination, about 65 per cent pass the bar examination, and only about 20 per cent pass the CPA examination. The variance in these results proves how the examination correlates with educational training to establish standards of competence. In the medical profession the educational requirements are so high that it is not necessary for very many applicants to be kept out of the profession at the examination level, whereas in the public accounting field only one year of formal education is necessary and therefore the examination is depended upon to keep out incompetent applicants. Thus the educational requirements and the examination are the two primary tools for maintaining standards.

Standards of competence are also upheld by continuous efforts on the part of professional persons to prevent unauthorized practice either by unlicensed practitioners masquerading as professionals or by persons in borderline occupations rendering services which they conceive to be within their own competence but which are actually within the competence of some other profession, such as the problem which occasionally arises of an accountant or real estate broker practicing law. Unauthorized practice can be prevented by enforcing the criminal penalties established in most of the professional licensing statutes, by encouraging the Department of Registration and Education or a licensed professional who was damaged by the activities of the unlicensed person to institute lawsuits to enjoin the unauthorized practice, and by the fact that unlicensed persons have no standing in court to collect fees for their unauthorized practice. In the medical and legal professions the professional societies maintain constant vigilance over the field of unauthorized practice.

Finally, standards of competence are maintained by the common provision that corporations shall not practice a profession. Statutes in Illinois expressly state that law and public accounting, for example, cannot be practiced by a corporation. Moreover, a corporation would not be eligible to practice most professions simply because it could not take and pass the examination for competence, it could not submit to investigation of its moral character and it would, therefore, not be eligible for a professional license. In Illinois the statutes provide that architecture and structural engineering may be carried on through the form of a corporation provided that a registered architect or a registered structural engineer is the chief executive officer or the managing agent of the corporation and provided that he supervises and controls the corporate work. The professional engineering statute is silent in regard to whether a corporation can practice law. The requirement of that statute that "a person is qualified to receive a certificate of registra-

tion who is of good moral character and temperate habits" and so forth indicates that only a physical person and not a corporate person could so qualify. However, the Secretary of the State of Illinois will approve charters for engineering corporations provided that a person with a structural engineering license is in control.

With the requirement that a professional man have greater knowledge than an ordinary person, there inevitably develops a great disparity of knowledge between the professional man and his client and hence a greater opportunity for the professional man, if he were so inclined, to take advantage of and to overreach his client. Therefore, in addition to the standards of competence, a profession must establish and maintain standards of integrity. These standards are also necessary to protect the public. Standards of integrity may be enforced before admission to the profession and in order to close the door to persons with character defects or they may be enforced after admission to take away the license of a person who develops character defects subsequent to receiving his license.

All of the professions require that a person be of good moral character. In the legal profession an extensive character examination is made of each applicant for admission to the Bar. For example, in Chicago alone the Character and Fitness Committee appointed by the Supreme Court of Illinois consists of seventeen members who make full investigations and hold complete hearings in regard to the character of every prospective lawyer. In some cases character reports are also received in regard to a particular applicant from the National Conference of Bar Examiners. These reports do not depend upon the usual responses received from the character references given by the applicant but are careful investigations made through all persons who may possibly have any knowledge of the applicant and his activities. The Illinois Supreme Court is presently considering the feasibility of requiring law students to register and to take an examination as to their character and fitness when they first begin to study law. In this way a student who was involved in some difficulty in his early years will not first learn after he has completed his law course and passed the bar examination that he cannot be admitted to practice because of his character defects.

There are three principal ways in which standards of integrity can be maintained after the professional man has received his license. One of the most important is the result of the relation which is automatically created by law between the professional man and his client, known as the fiduciary relation. Whenever one person by reason of his superior knowledge enters upon a course of dealing with another person of admittedly inferior knowledge in the field in which they are both dealing, the law imposes upon the superior person the obligations of a fiduciary. A fiduciary relationship exists between lawyer and client, doctor and patient, clergyman and parishioner, banker and depositor and a host of other professional relations. By virtue of his fiduciary obli-

gation, the professional man cannot deal with his client as, for example, businessmen ordinarily deal at arm's length. The fiduciary must make all disclosures, conceal nothing, and do everything in his power to advance the interest of his client. Failing this he is subject to severe legal penalties. For example, it is because of the fiduciary obligation that a lawyer can seldom if ever succeed as a beneficiary under the will of his client which he has drafted.

The second method of enforcing standards of integrity after admission is through codes of ethics. Most of the professions have codes of ethics. Although many of the canons of ethics simply restate principles of common morality, experience has shown that there are some persons who need instruction even as to these principles. However, codes of ethics go beyond principles of common morality and impose other duties which have no other moral significance. For instance, advertising is certainly not immoral but it is unethical for a lawyer to advertise. With the advantages, rights and privileges of being a member of a profession, there are commensurate duties—duties to the public, duties to the client and duties to professional colleagues. Most codes of professional ethics set forth these duties under each category and guide the professional man in his dealings with public, client and colleague.

Finally, standards of integrity are enforced through disciplinary proceedings which involve the revocation or suspension of a license or the censuring of the professional person. The statutes set forth certain grounds for discipline. For example, in medicine discipline may be invoked for conviction of a felony or conviction of abortion, gross malpractice, habitual intemperance, falsely impersonating another professional man, false statements as to cures and professional association with charlatans. The grounds for discipline in professional engineering are such things as fraud and deceit, gross negligence or incompetence, conviction of a felony or insanity. In all of the professions supervised by the Department of Registration and Education, the professional committee, after notice to the person to be disciplined, holds a hearing and then makes a recommendation to the Director of Registration and Education. The Director then revokes or suspends the license, censures the person involved or upon the recommendation of the Committee, no action is taken.

It is interesting to observe that persons are *kept out* of a profession mainly through the examination in regard to their competence since most of the applicants have had no opportunity to permit character defects to appear. On the other hand, persons are *put out* of a profession mainly for character defects since once a license has been issued, seldom is the question of the licensee's competence open for reexamination. Even in those cases where a licensee is apparently incompetent, he can usually defend himself on the grounds that he used his best judgment and discretion under all of the circumstances.

In most professional fields the accused professional

person is given a full and complete hearing and every possible opportunity to defend himself. In the law profession, for example, a complaint is first brought to an inquiry committee which determines what further action should be taken; a full hearing is then had before a subcommittee of the Grievance Committee which then makes recommendations to the full Grievance Committee, which in turn makes recommendations to Commissioners of the Supreme Court consisting of the board of managers of the Bar Association plus the members of the Grievance Committee. Then if discipline is recommended, the case is sent to the Illinois Supreme Court for final action.

One of the outstanding distinctions between a professional man and all others is his independence. One of the tests of such independence is the percentage of self-employment in the various professions:

	Self-Employed	Employed
1. Dentists	85%	15%
2. Lawyers	80	20
3. Doctors	62	38
4. Architects	40	60
5. Accountants	9	91
6. Surveyors	8	92
7. Engineers	4	96
8. Chemists	2	98

In the above table although 20 per cent of lawyers are listed as employed, many of these are employed by independent law firms, by local and federal governments and as judges, so that only three per cent of all lawyers are employed by lay concerns such as banks and industrial corporations. As a matter of fact, industrial law departments are ordinarily not very successful and do not exist in many companies because it is virtually impossible to recruit competent lawyers for employment in industry as lawyers. Therefore, one of the obvious differences between the legal profession and the engineering profession is the fact that only three per cent of lawyers are employed by industry whereas about 96 per cent of engineers are employed by industry and government. However, this wide discrepancy can be explained to some extent by the fact that there are far more engineers than lawyers:

	Number
1. Engineers	534,424
2. Accountants	383,676
3. Doctors	192,317
4. Lawyers	181,226
5. Chemists	75,747
6. Dentists	75,025
7. Surveyors	26,229
8. Architects	25,000

A profession always involves some public service and rightly so, and it is also commonly and correctly stated that compensation is not of first importance to a professional man. However, this should not be interpreted to mean that the professional man is not entitled to adequate compensation. As a matter of fact the reason

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why money should not be important to him is because it should be assumed by everyone that he is entitled to adequate compensation and he should not be required to devote any of his time or effort to worry about his compensation. Several statistics published recently show that doctors are the highest paid profession with lawyers second, dentists third, architects fourth, and engineers fifth.

It is important for professions to develop recommended or minimum fee schedules since such schedules not only protect the public against exorbitant fees but also protect the dignity of the profession against a debasement of the value of professional services.

It is encouraging to note that the National Society of Professional Engineers has voiced its belief that professional status is incompatible with unionization. There is no doubt that if professional engineers in great numbers are employed in industry they are entitled, as other employees are entitled, to bargain for the best possible situation for themselves. But such bargaining should not be entrusted to unions dominated by non-professionals. It is because of a similar feeling of independence that lawyers and other professional men resisted for so long even such things as Social Security benefits on the ground that once some independence is surrendered, even in order to obtain a benefit, other areas of independence are jeopardized.

A professional man has a better opportunity of maintaining his independence if he is active in his professional societies, and, of course, the personal relation which usually exists between a professional man and his client is a further guarantee of independence.

Finally, the last hallmark of the professional man is his availability for public service at all times. This service is usually rendered through his professional societies but is also rendered at the request of any public agency or in the interest of charity.

Because the standards of competence and integrity are high, it is a privilege to be a member of a profession, but the duties and obligations are also great. A few years ago the President's Commission on Higher Education for American Democracy reported:

"All the professions are urgently in need of leadership and professional statesmanship. They need men who possess disciplined imagination, social awareness, and . . . who can see beyond the details of their own jobs to recognize professional problems and obligations and take constructive and farsighted action about them."

Are You an Engineer?

"An Engineer is one who passes as an exacting expert on the strength of being able to turn out, with prolific fortitude, strings of incomprehensible formulae calculated with micrometric precision from extremely vague assumptions, which are based on debatable figures acquired from inconclusive tests and quite incomplete experiments, carried out with instruments of problematic accuracy by persons of doubtful reliability and rather dubious mentality, with the particular anticipation of disconcerting and annoying everyone outside of their own fraternity."

A St. Louis contractor recently ordered a \$500,000 building job held up until a robin, nesting on the same site, hatched her eggs. He explained: "I'm no bird lover. I just respect a fellow contractor."

Living within your income, these days, produces some mighty cramped quarters.

A remark snatched out of the air in the national capital, overheard while passing the White House: "For a family of two, they certainly burn enough lights."

NEWS FROM THE CHAPTERS

Central Illinois Chapter held a pre-Thanksgiving meeting on November 15 in the Pastel Room of the Orlando Hotel. Professor Thomas C. Shedd, member of Champaign County Chapter and also member of the faculty of the University of Illinois, spoke to the Chapter. One of Professor Shedd's deep interests is his membership on the State of Illinois Professional Engineering Examining Committee. Professor Shedd has been a member of the Committee since the Bill was signed and became law on July 20, 1945. He discussed the history of the law; the reasons why the first law was declared unconstitutional, and many of the problems which the committee is asked to solve.

Lake County Chapter held its October meeting on Wednesday, the 17th, at Hank's Supper Club. The program consisted of a panel discussion of Lake County's highway safety program. G. M. Dixon, Chapter Program Chairman, acted as panel moderator with the following panel members:

M. E. Amstutz, County Superintendent of Highways
P. M. O'Connell, Chairman of the Lake County Safety Commission

George Crawford, Editor of the Waukegan *News-Sun*
Joseph Welch, Member of the County Advisory Committee.

The 45 members and guests present reported a very successful and interesting program.

West Central Chapter's October meeting was held on the 17th at the Galesburg Club in Galesburg. Those who attended the meeting made an inspection trip to the offices of the Inter-State Telephone Company. At the conclusion of the inspection trip the members and guests returned to the Galesburg Club and viewed a motion picture of the new exchange station recently put into operation at Avon, Illinois.

Joliet Chapter held a meeting on October 16 at the Candlelight, Joliet. Vice President Brown introduced Lloyd P. Morris, Chief Engineer of the National Systems Consulting Service of Motorola, Inc., who spoke on the subject "School Board Problems—Progress."

Rock River Chapter held its September meeting on the 17th. Vice President R. H. Renwick introduced Superintendent of Schools Sherwood Dees, who spoke on the subject of education of scientists and engineers. He pointed out the necessity for early counselling of children and parents. Also, he stressed the need for better mathematics and science teachers and suggested higher pay. "A lively question and answer period followed the talk.

On October 9 a special meeting was held to discuss the proposed merger of IAHE and ISPE. The fourteen members present discussed most of the angles of the problem, however, no official business was transacted.

Chicago Chapter's October meeting was held on October 18. The forty-six members and guests heard a talk by Mr. Robert A. Sprecher, the text of whose talk is given in other pages of this issue.

On November 1, the Executive Committee of the Chapter met and transacted much Chapter business, including a final statement and wind-up of the Certificate Presentation Dinner and a report on the status of the 72nd Annual Meeting of the Illinois Society.

How the American Society of Mechanical Engineers Selects Its Officers

"The office shall seek the man, rather than the man or his friends seek the office." This policy, tacitly accepted rather than stated in Society law, is the reason why only one name appears on the ballot for each office to be filled. The single name is occasionally questioned as evidence of undemocratic procedure, so this statement of how the Society selects its prospective officers seems to be in order. The procedure that is followed may be described as "representative." The members in the eighty-four Sections throughout the country elect their officers, who in turn select the Regular Nominating Committee and cooperate with that committee through the year to bring forward names of desirable candidates.

The candidates who appear on the ballot are selected by the Regular Nominating Committee which meets during the Semi-Annual Meeting. At the meeting the Committee holds open hearings for members to appear to present and discuss candidates. The slate is decided upon from many names considered.

The Rules of the Society permit the inclusion of names of more than one candidate for all offices except the presidency. Despite this provision which has been discussed each year by the Regular Nominating Committee, the feeling of the committee has usually been that the procedures followed by the Committee as outlined above safeguards the interest of the members and brings forward the names of well-qualified candidates. Election to office in the Society is an honor and as such should not be sought by campaigning in a competitive manner. The selection of able and sincere Nominating Committee members by elected representatives insures able and deserving officers.

Married couple: Two people who sit on a park bench to get fresh air.

A cynic once defined an engagement as a period during which a girl looks around to see if this is really the best she can do.

"All right, all right," snapped the wife to her husband, "I like to spend money. But name one *other* extravagance!"—*Rotarian*.

The man who is content to scratch the surface will never do a polished job.—Vincent Argondezzi, *Partners*.

DO THE OLDSTERS WANT JOBS? ESPS WANTS TO KNOW

by WM. N. CAREY, Secretary Emeritus, A.S.C.E.

Are there many or few retired engineers, or others past fifty, able and willing to take temporary jobs in engineering? ENGINEERING SOCIETIES PERSONNEL SERVICE, the employment agency for the engineering societies, wants to know. The Board of Directors of ESPS has asked me to pose the question. Being on the retired list myself, both from the army and from active professional work, and having served as a member and chairman of the Board of ESPS, the question seems to me well worth trying to answer.

The current shortage of engineers and scientists is a well-known fact. Continuous advertising in the newspapers of metropolitan areas and the quarterly combing of our campuses emphasizes the need for young engineers and scientists. The supply does not begin to meet the demand for young men in these fields. Is the shortage confined to the young men, or does it include men in the older brackets in industry and government? Is it possible partially to meet today's need for engineers and scientists by temporary employment of men no longer young but willing and able to perform the required tasks? If such men are available and employers want them as temporary help, the task of trying to get employers and prospective employees together will be undertaken by ESPS.

It is realized, of course, that there are deterrents and complications in any attempt to employ older or retired engineers even temporarily on routine work. Some of the largest companies, whose engineer recruitment efforts are the most impressive, simply will not hire engineers or scientists over thirty-five. Their reasons are sound where permanency in an organization is envisaged. But temporary, day by day, or week by week, employment of men to help level off peak loads need not affect the retirement system of a company nor interfere with lines of promotion, apprenticeship jobs and other factors vital to employment planned on a permanent basis.

From the viewpoint of the older prospective employee, the fifty-plus man or the Social Security beneficiary of over sixty-five, there are deterrents too. These would tend to dampen the desire to take a "by the day" or week position as a temporary helper but not an integral part of a going organization. Granting the handicaps which exist from the viewpoint of both employer and prospective older employees, it still seems reasonable that some of the shortage of engineers could be met by greater use of the older members of our profession now unemployed or retired.

ESPS does not now know how many of such potential employees are available. If *you* are an engineer or scientist over fifty, unemployed or retired, and if you are willing and able to take a temporary job, please tell ESPS. Send a brief letter to Engineering Societies

Personnel Service, 8 West 40th St., New York 18, N. Y. Just tell us your professional branch, your specialty, your age, and refer to this article. If the response is adequate in numbers, the ESPS Board will attempt to work out a plan to bring these older engineers and scientists together with the industries needing them.

It should be borne in mind, of course, that ESPS with offices in New York, Chicago, Detroit and San Francisco continues ready to help any engineer or scientist of any age better his position or to obtain one. ESPS also continues to try to locate the particular engineer or scientist any specific employer may want. These have been the routine tasks of ESPS for more than 25 years. The proposal discussed here contemplates a special kind of placement from a yet unknown number of "prospects" fifty plus in years who still desire to help themselves and their profession in the work of the nation.

Although nature is our mother, she is not a complete guide to human conduct. By virtue of intelligence we are creating things she knows nothing about. If the natural man were the ideal man, the Red Indian, who used to hunt in this field, would be the peak of culture.
—*American Scholar*

Children will tend to adopt the beliefs of those whom they instinctively recognize as happy, and of no others.
—*Yale Univ. Press*

Progress consists largely of learning to apply laws and truths that have always existed.—*Advertiser's Digest*

Truth is the capital that finances expeditions into the lofty mountains of character and across the river of eternity.—*Matador (Tex.) Tribune*

When one of Susie's little friends came over to see her, she found the youngster playing with her new housekeeping set.

"Are you washing dishes?"

"Yes," replied Susie, "and I'm drying them, too, 'cause I'm not married yet."

It is folly to torture our minds with regrets over what cannot be changed. We must master the art of leaving if we are to master the art of living.—*Arkansas Methodist*

Epitaph for a radical: "He had a lover's quarrel with the world."

DIET: Something to take the starch out of you.—*Pathfinder*

OPTIMIST: A guy who, knowing the world is going to the dogs, starts a dog-food factory.

Ladies Auxiliary

On October 29 a Card and Halloween party was given by the Ladies' Auxiliary of the St. Clair Chapter of Professional Engineers at Grand Marias State Park Dining Room. It was a very pretty party with Halloween decorations, and with the guests decorated with Halloween hats, etc. We had many nice attendance prizes, together with table prizes. Cake and coffee were served to the guests.

We made enough money to keep some for our treasury and donate \$75 to the Engineers, making a total of \$200 donated to them this year.

A boy applied for a job in a butcher shop. "How much will you give me?"

"Three dollars a week: but what can you do to make yourself useful around a butcher shop?"

"Anything."

"Well, be specific. Can you dress a chicken?"

"Not on \$3 a week," said the boy.

PESSIMIST: A man who can look on the bright side and complain that the light hurts his eyes.

A heated argument scorches only one side.—*Argonaut*

The price of education is substantial—though not a thousandth part of the price of ignorance.—*Texas Outlook*

As long as we are not interested in it, there are two sides to every question.

Before a man can wake up and find himself famous, he must wake up and find himself.

Some people are like the fly on the wagon wheel, which said, "I certainly raise a big dust."

You don't have to worry about your station in life . . . there's always somebody who'll tell you where to get off.

Construction Foreman: "What has four legs and a tail, and sees equally well from both ends?"

Pipe Calker: "A blind horse."

An old Pipe Pedlar says: "The road to success is crowded with wives pushing their husbands ahead."

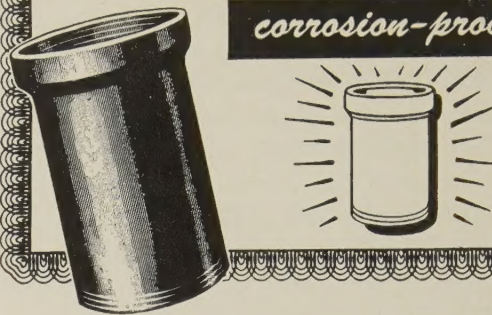
The prospective buyer for a new home commented to the builder, "These walls certainly don't look very sturdy."

"Of course not," said the builder. "We haven't put on the wallpaper yet."

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I hold every man a debtor to his profession;
from the which as men of course do seek to re-
ceive countenance and profit, so ought they of
duty to endeavor themselves by way of amends
to be a help and ornament thereunto.

Sir Francis Bacon

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Adm. Asst. Market Res. and Devel. Chem. and processing indust. 36. Grad in chem. eng. and bus. admin. Chemical engr. with bus. admin. training; exp. in market research and new product; sales development; about \$8400. Midwest. 724-IE

Sales Engr. Metal working and eqpt. 38. College; sold stamping prod. work in tubular fab. engrg. services and display advertising plant and tool engrg. exp. \$8000 plus comm. Midwest. 723-IE

Production or Mfg. Engr. Metal fabricating. 41. B.S. 15 yrs. tool and die shop exp.; 5 yrs. mfg. engrg. Successful background in trouble shooting technical problems requiring analytical approach for quality improvement. \$7500. Midwest. 721-IE

Plant and Sales Engr. 36. Some college; design and oper., off process eqpt. lubrication engrg., schedules, specs., field problems; bldg. and eqpt. layout for construction of powder plants; 4 yrs. in sales and services of petroleum prod. to industrial and motor fleet accts. \$7200. Midwest-South-West. 719-IE

Consulting Engr. Lge. mfg. plant. 51. B.S., E.E. 23 yrs. exp. in supervision of design and construction of large industrial and public projects. Familiar with construction and maint. problems from lge. distribution systems to minute control. \$12,000. Midwest. 717-IE

Quality Control Mgmt. Electronics, chem., mech.). 34. B.S., MBA: seeking mgmt. level application of statistical quality control techniques; have had 8 yrs. exp. in applying scientific approach to economic research, quality control, design evaluation and evaluation of the reliability of electronic systems. \$9400. Chicago. 714-IE

Mfg. Supervision, Methods. Metalworking. 38. B.S., M.E. Extensive exp. in material handling, plant layout job evaluation, project engrg., supervision of industrial engrg. dept. for metalworking plant of 3000 employees. \$10,000. Midwest or Southeast (only employer pay jobs.) 713-IE

Geologist. Construction-consulting engrg. 36. M.A.-Geol. investigated subsoil condition of bldg. and transportation routes and submitted findings to design section; asst. in making soil survey and supv. borings for structures; located natural deposits of granular materials for use on highway projects and supv. testing these deposits. \$8300. Midwest-West. 711-IE

Chief Engr. Construction. 58. 17 plus years in construction supv. of subcontractors; testing of all electrical eqpt; expediting of eqpt. some design of steam power plants and substations. \$8000. Midwest-West. 710-IE

Construction Supt. Construction. 32. B.S., C.E. Field engrg; 7 yrs. exp. bldg. construction; industrial, commercial, institutional type of construction. \$9400. Chicago area only. 709-IE

Chief Engr. Construction. 52. D.C.E. arch. engr. in charge of designing houses and supv. construction; in charge of developing subdivisions, surveying land, grading and design new roads; supv. all stages of bldg. constr. contract subcontractors, material salesmen, laborers; using level, transit, etc. Speak Ital. \$8000. U. S. or Europe 707-IE

Consulting or Executive Engr. 56. M.E. and E.E. Consulting or executive engr. grad. study; physics. Chief engr., consulting engr., factory manager. Electronic, electro-mech. components, high tension eqpt. Development and product design to improve quality, reduce cost. Audio eqpt. Testing procedures and design; over 30 yrs. exp. \$15,000. Midwest. 699-IE

Construction Supt. Project Engr. Civil). 49. College; engrg. construction field. 30 yrs. exp. all phases of earthmoving, steel and concrete structures, refineries and petrochemical plants. South. 697-IE

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Production Engr. B.S., M.E. or equiv. Age to 40. 5 yrs. mech. engrg. exp. Know tools,

dies, mfg. process. Duties: Planning mfg. process-tooling requirements-facilities for a mfr. of antennae. Sal. \$5750-6500. Loc.: Chgo. Empl. will pay the fee. C-5801

Welding Specialist. B.S., E.E. or B.S., M.E. Age to 35; 3-5 yrs. in mfg. or engrg. involving use of resistance welding techniques. Duties: development of resistance welding methods and other joining techniques for the mfr. of electrical control products. Sal. \$6500-\$8500. Loc.: Central Ill. Empl. will pay the fee. C-5803

Arch. or Struct. Grad. C.E. or Arch. Age up to 39; 1 plus yr. in arch. or struct. design. Know bldg. work. Duties: Design estimating, spec. writing and coordinating, mech. and elect. work on bldgs., pavements and other real estate improvements. Good opportunity for a refinery of pet. prod. Sal. about \$600 mo. Loc. Chgo. Empl. will pay the fee. C-5838

Development Engr. Grad. E.E.-electronics. Age 25 plus; 2 plus yrs. in development and design of electronic eqpt. such as guided missiles, telemetering, etc. All govt. work. Will be given project to follow thru to completion. Must be U. S. citizen. For a mfr. Sal. \$6500-\$7800. Loc. Chgo. Empl. will pay the fee. C-5839

Sales Engr. Grad. M.E. pref. Age 30-35; 5 plus yrs. in sales of appl. of mech. eqpt., pref. transmission. Duties: Sales engrg. within 60 mi. radius of Chgo., contacting industrial plants on sale of automatic clutches and transmission eqpt. Must have mech. aptitude and able to make necessary layouts. Car furnished. For a mfr. of industrial clutches. Sal. \$550 plus comm. Loc. Chgo. Empl. will negotiate fee. C-5840

Designer-Const. Dept. Mech. or Civil. Age to 45; 5 plus yrs. in design dept. of consulting or construction company. Duties: All design and prep. of specifications for construction of airport terminal bldgs., ticket offices, etc., incl. mech. facilities and struct. Very little board work. For an aeronautical transportation. Sal. \$6500-\$8000 dep. on exp. Loc. Chgo. C-5848

Asst. to Operations Mgr. Degree. Age to 40. Know general construction. Duties: Help with burden of detail in construction supv. Check costs, design and drafting. Expedite help in setting up jobs and completion of work for general construction. Sal. \$7800 plus. Loc.: Calumet area. Empl. will negotiate the fee. C-5852